REMARKS/ARGUMENTS

Applicants are providing a full listing of the claims as currently pending for completeness. No amendments are being made to the claims.

The Official Action dated May 31, 2007 has been carefully considered. It is believed that the following comments represent a complete response to the Examiner's rejections and place the present application in condition for allowance. Reconsideration is respectfully requested.

35 USC §103

The Examiner is maintaining the objection to claims 1, 3, 5-17 and 21-23 under 35 USC §103 as being unpatentable over Willmitzer et al. (WO 92/01042) in view of Kusnadi et al, 1998 (Biotech. Bioeng, Vol. 60, No. 1, p. 44-52) and Applicant's admitted prior art. We respectfully disagree with the Examiner for the reasons that follow.

With the response that was filed on March 20, 2007, we submitted a Declaration under 37 CFR 1.132 of Brent Pollock (hereinafter "the Pollock Declaration"). The Examiner comments that the Pollock Declaration demonstrates that when the seeds containing chymosin were extracted with hexane, 31% of the activity (as compared to the positive control) was detected. The Examiner concludes that the "chymosin protein activity recovery of 31% is NOT evidence for destruction of the activity of the chymosin". We respectfully disagree with the Examiner. When looking to prepare a protein on a commercial scale, a method that destroys 70% of the activity of the protein to be recovered would not be acceptable. Importantly, the inventors have developed a method that does not destroy any of the activity of the chymosin. This method is clearly an inventive advance over the prior art.

The Examiner also states that the figures included with the Pollock Declaration are light and fuzzy. In response, we are enclosing a second copy of the Pollock Declaration that

includes figures of high quality. We request that the Examiner review and evaluate the figures.

The Examiner also states that Kusnadi teaches extraction of the seed fraction with aqueous phosphate buffer. As stated in the last response, Kusnadi does not teach the isolation of chymosin from plant seed. Further, contrary to the Examiner's assertion, Kusnadi only teaches aqueous extraction of rGUS after grinding of the seeds. In particular, Kusnadi states that "All samples (kernels, full-fat germ, and defatted germ; figure 2) were ground using a household coffee grinder **prior** to protein extraction." (emphasis ours). The Pollock Declaration at point 7 indicates that dry crushing of the seed will destroy chymosin activity. Therefore, grinding the seeds in the coffee grinder prior to the aqueous protein extraction (as Kusnadi does) would result in no chymosin activity. Therefore, Kusnadi does not teach or suggest a method as taught in the present claims.

As we have previously stated, prior to the present invention, no one had prepared chymosin in plant seeds and isolated active chymosin protein from plant seeds. Willmitzer teaches the production of chymosin in plants but does not teach or suggest how to isolate active chymosin from plant seeds. At the time of the invention, the art-recognized method to extract proteins from seed was to use an organic solvent such as hexane. In fact, Kusnadi et al. teach that hexane extraction did not destroy the activity of rGUS. Therefore, at the time of the invention, based on the teachings of Willmitzer and Kusnadi, which are cited by the Examiner, one of skill in the art would have been motivated to isolate chymosin from seed using hexane extraction. As demonstrated in the Pollock Declaration, the hexane extraction method of the prior art is **not** useful to isolate active chymosin from plant seed. Kusnadi also teaches dry milling of seed prior to aqueous extraction. Again, as shown in the Pollock Declaration, this method destroys all of the activity of chymosin. Therefore, the combined teachings of the prior art teach away from the present invention. Applicants have developed a new and inventive method for producing and isolating chymosin from plant seeds as claimed in

claim 1. The Examiner has not identified any teaching or suggestion in any of the prior art references that would lead one of skill in the art to the present invention.

In view of the foregoing, we respectfully request that all of the objections to the claims under 35 U.S.C. §103 be withdrawn.

The Commissioner is hereby authorized to charge any deficiency in fees (including any claim fees) or credit any overpayment to our Deposit Account No. 02-2095.

In view of the foregoing, we submit that the application is in order for allowance and an early indication to that effect would be greatly appreciated.

Respectfully submitted,

GIJS VAN ROOIJEN ET AL.

By 

Micheline Gravelle
Reg. No. 40,261

Bereskin & Parr
Box 401, 40 King Street West
Toronto, Ontario
Canada M5H 3Y2

Tel: 416-957-1682
Fax: 416-361-1398